No. LXVI.

An account of a Kettle for boiling Inflammable Fluids.—In a letter from THOMAS P. SMITH, *to* ROBERT PATTERSON.

Philadelphia, June 14, 1798.

SIR,

Read, June 14, 1798. WHEN we conſider the many unhappy accidents that occur from veſſels containing inflammable fluids boiling over and ſetting fire to the buildings in which manufactories of them are carried on, it muſt ſtrike us as a matter of importance to form a veſſel which ſhould be ſo conſtructed as to prevent any of thoſe accidents, and yet of ſo ſimple a form as to render it fit for general uſe. Impreſſed with theſe ideas, I take the liberty of offering for your approbation the following plan.

Let A B C D (*ſee figure*) repreſent a large kettle, D E, a ſpout running out to the diſtance of three or four feet, commencing at D, four or five inches from the brim of the kettle, and the termination of it E, juſt as high as the brim C. Let the bottom of this ſpout be covered with wet ſponges or rags. Now ſuppoſe the kettle to be filled up to D with any fluid, then as ſoon as it commenced boiling it would riſe in the kettle, and in riſing but a ſmall perpendicular height, would paſs a conſiderable diſtance up the ſpout D E: here the liquor would ſoon cool and of conſequence fall back into the kettle, and the whole ſubſide to its original height. This would occur as often as the fluid roſe above D, as the evaporation from the wet ſponges or rags, would keep D E conſtantly cool.

It would perhaps be beſt to paſs the ſpout through the ſide of the building into the open air, as thereby the evaporation would be increaſed, and conſequently the ſpout kept at a lower temperature; in this caſe it might be covered.

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In caſe of the fluid to be boiled poſſeſſing a very ſtrong elective attraction to caloric or the matter of heat, the ſpout might be extended to the width of the diameter of the kettle or a projecting ſhelf might be formed all round it, lined below with wet ſponges or rags.

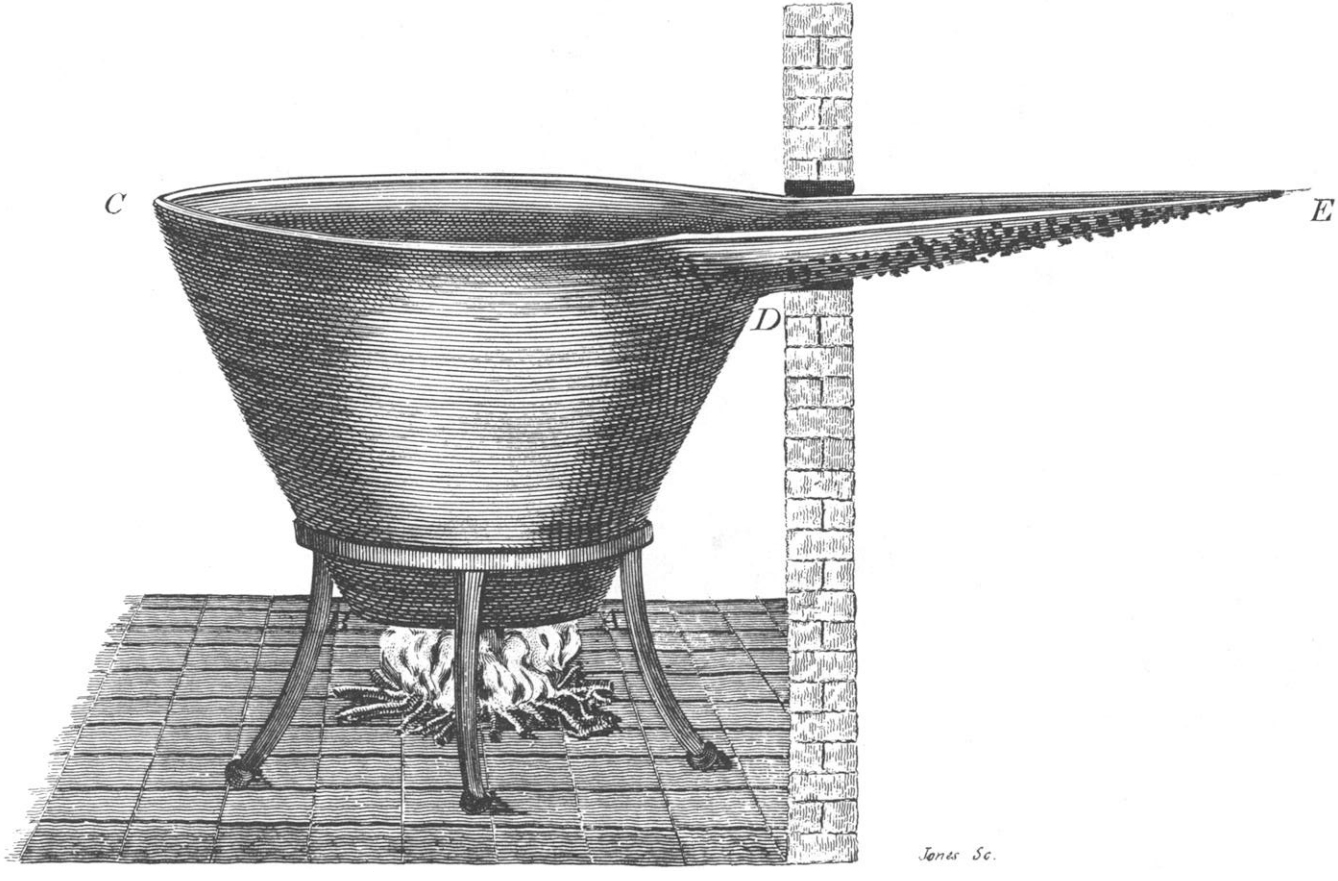
I remain, Dear Sir,

Yours, &c.

THOMAS. P. SMITH.

Mr. ROBT. PATTERSON.

P. S. In conformity to the wiſh of the ſociety I procured a veſſel of the form here propoſed. I firſt tried the experiment with water, it boiled very rapidly, but every time the water roſe into the ſpout it immediately ſubſided, although the ſpout had for ſome time been directly expoſed to the heat of one of Lewis's furnaces: I afterwards attempted it with oil, but before the oil boiled the ſoldering of the veſſel, which was made of tin, melted.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